

### ABSTRACT OF THE DISCLOSURE

An AM receiver incorporates an antenna, a transistor, a current source, and a power supply. The antenna is connected to a gate electrode of the transistor and through a link to a signal earth. In operation, the antenna receives radiation and generates a corresponding input signal which propagates to the gate electrode. The transistor is operable to process the input signal in two steps, namely to reflectively amplify the input signal to generate a correspondingly reflectively amplified input signal at the gate electrode in a first step, and amplitude demodulate the amplified input signal in a second step. The transistor is operable in a non-linear region of its current/voltage characteristic whereas it simultaneously provides reflective amplification and signal demodulation, namely the two steps occur simultaneously. In contradistinction, conventional demodulators employing gain devices operating non-linearly to provide amplitude demodulation incorporate the devices configured to function as transmission amplifiers.